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NPRDC TR 84-56

SEPTEMBER 1984

**RECRUIT PREPARATION AND ORIENTATION TRAINING
(REPORT): A PROGRAM TO REDUCE ATTRITION AMONG
NON-SCHOOL-GUARANTEED RECRUITS IN THE NAVY**

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**NAVY PERSONNEL RESEARCH
AND
DEVELOPMENT CENTER
San Diego, California 92152**



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Kathleen Fernandes
Ronald M. Bearder
J. Douglas Felter

Approved by
J. S. McMichael

Released by
J. W. Renard
Captain, U.S. Navy
Commanding Officer

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the program was tested with 484 recruits at the Recruit Training Center, San Diego from October 1980 through February 1981. The training attrition rate for REPORT participants was 3.9 percent lower than that for control recruits. For apprentice training graduates, the difference in training attrition rates was sustained after 29 months in the fleet. However, differences in training, fleet, and total attrition were not statistically reliable. A cost-benefit analysis indicated that REPORT was a cost-effective program, with benefit-to-cost ratios ranging from 2.1 to 1 to 2.8 to 1, depending upon course length and class size.



S/N 0102-LF-014-6601

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FOREWORD

This research was performed under advanced development subproject Z1251-PN.01 (GENDET Counterattrition Training Approaches) and engineering development subproject Z1252-PN.02 (Adjustment and Orientation Systems) and was sponsored by the Deputy Chief of Naval Operations for Manpower, Personnel, and Training (OP-01), Counterattrition Task Force. Taken together, these two subprojects formed Project RETAIN, the objective of which was to develop, test, and evaluate training programs designed to reduce attrition among general detail (GENDET) personnel.

The current report describes the development, test, and evaluation of the recruit preparation and orientation training (REPORT) program, which was designed to facilitate the adjustment of non-school-guaranteed personnel to recruit training. A subsequent report will describe the development, test, and evaluation of the fleet orientation and adjustment (FLOAT) program, which was designed to help seaman apprentices adjust to life aboard a Navy ship.

The development, test, and process evaluation of REPORT were conducted under contract N00123-79-C-1511 with Westat, Inc. and the American Institutes for Research. The contracting officer's technical representatives for this work were Raye Newmen and Kathleen Fernandes. The impact evaluation and cost-benefit analysis of REPORT were conducted in-house.

J. W. RENARD
Captain, U.S. Navy
Commanding Officer

J. W. TWEEDDALE
Technical Director

SUMMARY

Problem and Background

Following the advent of the all-volunteer force, the Navy was experiencing costly attrition rates among first-term enlistees. Much of this attrition was occurring within the general detail (GENDET) force, particularly among GENDETs who became seaman apprentices. To address this problem, two training programs were proposed:

1. The recruit preparation and orientation training (REPORT) program, to be conducted with non-school-guaranteed recruits at the start of recruit training.
2. The fleet orientation and adjustment training (FLOAT) program, to be conducted with seaman apprentices after they completed apprenticeship training.

Objective

The objective of this effort was to develop, field test, and evaluate the REPORT program. A subsequent report will describe the development, field test, and evaluation of the FLOAT program (Fernandes & Bearden, in press).

Approach

A needs assessment was conducted to identify the factors that influence adjustment to the Navy in general and to recruit training in particular. Based on results of the needs assessment, a 3-day REPORT program was developed to provide non-school-guaranteed recruits with a realistic set of expectations as well as skills and knowledge to help them cope with the demands of the training and fleet environments. The program was tested using 484 recruits at the Recruit Training Center (RTC), San Diego from October 1980 through February 1981. The recruits participated in REPORT at the start of recruit training after receiving and outfitting and before they were assigned to their regular companies. A control group of 235 recruits identified for comparison purposes proceeded through recruit training in the normal manner. Because some of the recruits in each group received an "A" school guarantee during recruit training, the impact of the program was evaluated for (1) all of the recruits who participated in REPORT and (2) those recruits who were GENDET-destined. The evaluation consisted of assessing attitudes during recruit training, tracking attrition during training and fleet assignment, assessing performance during training and fleet assignment, and conducting a cost-benefit analysis.

Results and Discussion

The results for the full REPORT and control groups indicated that the behaviors targeted by the program were affected in the desired direction. The training attrition rate for REPORT participants was 3.9 percent lower than that for control recruits; the magnitude of this difference, however, was not statistically reliable. REPORT participants had better performance records during recruit training in that they experienced fewer administrative actions and spent fewer days in special units than did control recruits.

Further, the training attrition rate for the GENDET-destined REPORT recruits was 4.3 percent lower than that for the GENDET-destined control recruits; this difference in attrition increased to 5.4 percent after 29 months of service. REPORT did not simply delay normal attrition by keeping in the Navy those recruits who should have been allowed

to attrite during training. Although REPORT recruits maintained their retention advantage while in the fleet, the differences in training, fleet, and total attrition were not statistically reliable.

The cost-benefit analysis indicated that REPORT was a cost-effective program for GENDET-destined recruits with benefit-to-cost ratios ranging from 2.1 to 1 to 2.8 to 1, depending upon course length and class size. By month 18 of enlistment, total implementation costs for a 3-day program with 25 students per class were offset by the benefits in man-months of service gained. Although the differences in attrition between the REPORT and control groups did not reach conventional levels of statistical significance, the persistence of the differences over time as well as the magnitude of the benefit-to-cost ratios are evidence of program's effectiveness.

Conclusion

REPORT is a promising GENDET counterattrition program that produced a modest training attrition reduction that was sustained during fleet assignment and that generated substantial benefit in productive service time for the Navy.

Recommendation

It is recommended that the Research Applications Center at CNET conduct additional testing and evaluation of REPORT to determine whether the program warrants implementation on a Navy-wide basis.

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INTRODUCTION

Problem and Background

Following the advent of the all-volunteer force in 1973, the Navy was experiencing costly attrition rates among first-term enlistees. Much of this attrition was occurring within the general detail (GENDET) force, particularly among those who became seaman apprentices. Guthrie, Lakota, and Matlock (1978) tracked a cohort of GENDETs who enlisted in February 1976 and found that seaman apprentices had the Navy's highest attrition rates; 54 percent of them had either deserted or been discharged during the first 2 years of enlistment. Also, Guthrie et al. found that (1) the expectations of GENDET personnel at the time of enlistment were highly unrealistic with respect to training and educational opportunities, the nature of the specific job and the skills required, and the overall nature of shipboard life, and (2) those reporting to their first fleet assignment felt that they were ill-prepared for shipboard life, lacked essential job skills, and had received little or no orientation to their ship or to its organization and facilities.

Because of these high attrition rates, the Counterattrition Task Force of the Deputy Chief of Naval Operations for Manpower, Personnel, and Training (OP-01) requested several counterattrition projects, including one that focused on developing training approaches for reducing attrition among GENDETs. This effort, known as Project RETAIN, was aimed at developing programs that would help GENDETs adjust to military life and shipboard duty, thereby reducing premature losses and enhancing job performance. Two training programs were proposed:

1. The recruit preparation and orientation training (REPORT) program, to be conducted with non-school-guaranteed recruits (i.e., those who start recruit training without an "A" school guarantee). REPORT was intended to help recruits adjust to the unique demands of recruit training in terms of its strict regimentation, attention to detail, rigid academic and physical requirements, and negation of personal feelings and opinions.

2. The fleet orientation and adjustment training (FLOAT) program, to be conducted with seaman apprentices after they completed apprenticeship training. FLOAT was aimed at helping seaman apprentices adjust to the different demands of life on a Navy ship, where controls are relaxed and self-initiated actions become much more important for personal and career advancement.

Objective

The objective of this effort was to develop, field test, and evaluate the REPORT program. A subsequent report will describe the development, field test, and evaluation of the FLOAT program (Fernandes & Bearden, in press).

APPROACH

Development of REPORT Program

Needs Assessment

A needs assessment was conducted to identify those aspects of the recruit training experience that (1) present particular problems for recruits, especially those without a

school guarantee, (2) can be logically or empirically linked to recruit attrition, and (3) could be addressed in a 3-day training course given at the start of recruit training. The needs assessment was conducted by:

1. Examining existing Navy programs designed to address adjustment problems to identify aspects that could be applied in the development of REPORT (see Westat, 1980) and reviewing the research literature on recruit training, adjustment, and attrition.

2. Conducting on-site observations of receiving and outfitting (R&O) activities and recruit training classes at the Recruit Training Center (RTC), San Diego in May and June 1980.

3. Conducting individual interviews at RTC San Diego in May and June 1980 with (a) 47 recruits who were at various stages of recruit training, (b) 28 recruits who had seen the recruit preview film, (c) 14 company commanders who were leading a company, and (d) 7 seaman apprentices. The first group of recruits was asked to discuss problems they encountered in specific areas of the recruit training program, with emphasis on each problem's cause and immediate results; and the second, the ways in which recruit training as portrayed in the preview film differed from their expectations about and experiences in training. The company commanders were asked to identify situations that led them to take remedial action with recruits whom they perceived as having difficulty in dealing with some aspect of recruit training. Finally, the seaman apprentices were asked to describe their experiences in and attitudes toward recruit training.

The needs assessment identified four factors that influence adjustment to the Navy in general and to recruit training in particular and that could be addressed in a program such as REPORT:

1. Having realistic expectations about what will happen during recruit training.
2. Having the appropriate coping skills and behavior for dealing with stressful situations as a recruit.
3. Having a commitment to and identifying with the Navy.
4. Understanding the reasons that underlie recruit training activities.

These factors are described in detail in a contractor report (Felker, Radtke, Butera, & Shettel, 1980) and are summarized in the following paragraphs.

1. Realistic Expectations. Results of the on-site observations, interviews, and literature review all confirmed that recruit training is a stressful experience for recruits. Stress is an integral part of the training system and is used to create an environment in which changes in life style and values will be quickly made. The interviews with recruits indicated that they had difficulty dealing with the fast pace of the training, the strict accountability for what they perceived as trivial matters, the behavior and attitude of their supervisors, and the pressures of the classroom.

The research literature indicated that a realistic preview of what is to occur in recruit training may result in improved performance and quicker adaptation to stressful situations. Wanous (1977) concluded that realistic job previews reduced subsequent turnover in a variety of organizations. Horner, Mobley, and Meglino (1979) noted that Marine recruits who had been provided with a realistic job preview of their basic training

were significantly less likely to leave the service after training than were recruits who had not been provided with such a preview. Høiberg and Berry (1978) found that many recruits left the Navy because of unrealistic expectations about the Navy and Navy life.

2. Coping Skills. Recruits face a totally unique experience in recruit training and may, as a result, be uncertain about how to respond appropriately to the demands and pressures placed upon them. The interviews with recruits indicated that many felt personally threatened by the way they were treated in recruit training. A number of recruits reported that they felt they were treated "like a child," made to feel inferior, and constantly humiliated by the staff. The development of coping skills may assist recruits in responding to such pressures. Relevant coping skills include learning appropriate responses and stress and life management skills (Bandura, 1977; Jenkins, 1977; Sarason, 1977), and developing friendships with and assisting other recruits in overcoming the rigors of boot camp (Clemes, 1971; Reinstein, 1970).

3. Organizational Commitment. Recruits are expected to take on the prevailing norms and values of the Navy during recruit training. A major factor in developing such a commitment is the extent to which recruits can see a relationship between their personal values and goals and those of the Navy. Although several units of the recruit training curriculum are devoted to the area, the recruit interviews indicated that there was considerable confusion, misinformation, and unrealistic expectations about the Navy's classification procedures and the extent to which the Navy's career advancement system can meet the recruits' personal goals and expectations. In addition, some of the recruits reported that they had no clear job preferences or career goals.

The research literature has demonstrated a consistent relationship among job fulfillment, career expectations, organizational commitment, and indicators of dissatisfaction during or after recruit training (Greenberg & McConeghy, 1977; Landau & Farkas, 1978; Mobley, Youngblood, Meglino, & Moore, 1980). These findings suggest that, by increasing organizational commitment, it may be possible to reduce the level of dissatisfaction with recruit training and with the Navy in general. Furthermore, such a commitment can be built by clarifying and reinforcing a more accurate perception of both personal and organizational goals.

4. Knowledge and Understanding of Recruit Training. Recruit training presents a learning environment for recruits in which there is much to learn and very little time in which to learn it. Many of the recruits interviewed were bothered by the amount of emphasis put on academic learning, the poor instructional conditions, the lack of clarity in some of the material, and the lack of time for study. Although the research literature reviewed did not indicate that learning difficulties were related to recruit attrition, such difficulties have been identified as one additional source of stress that could contribute to eventual dissatisfaction and attrition (Greenberg & McConeghy, 1977). The following activities were considered to be important to facilitating adjustment during recruit training:

a. Recruits should be given a "head start" by presenting certain critical subject matter and procedures that would be taught again in regular companies.

b. Recruits should be taught why certain things are as they are in recruit training and the Navy; this would provide a context for future learning and would increase motivation to learn.

c. Recruits should be made to understand that what they do in their recruit company affects not only their adjustment to recruit training but also their future career in the Navy.

Training Rationale, Outline, and Materials

Based on the results of the needs assessment, a training rationale for REPORT was generated that connected the different components of the program with the terminal objective--graduation from recruit training. The basic rationale underlying REPORT was that behavior that recruits consider appropriate within the civilian environment is often inappropriate within the military environment. As a result, recruits may experience apprehension and stress, which, when coupled with an inadequate knowledge of the options available, can result in inappropriate behavior and poor performance during recruit training. If REPORT can provide recruits with a more realistic set of expectations and a repertoire of adaptive behaviors and skills, they will be better performers and less likely to attrite during recruit training. In addition, they will perform their jobs better, be less likely to become disciplinary problems, and be more likely to complete their first enlistment.

After the program rationale was developed, an outline of the training topics to be included in REPORT was prepared. The outline presented, for each topic, the estimated time, delivery mode, objective, and subarea into which the topic fell, and summarized the learning activities to be conducted. The outline was submitted to OP-01, the Chief of Naval Education and Training (CNET), and the Chief of Naval Technical Training in September 1980, and was revised based on comments received. The revised outline was then used to develop the instructor guides, which outlined the instruction in terms of materials, objectives, instructor activity, and student activity, and were developed according to Navy format. The instructor guides, along with the visuals and handouts, are provided in Shettel, Radtke, and Felker (1982).

As shown in Table 1, REPORT consisted of 19½ hours of instruction over a 2½ day period. It combined classroom lectures with military activities that duplicated all of the major aspects of recruit training, including barracks routines, inspections, marching, and classroom work. However, REPORT differed from recruit training in two important ways:

1. REPORT companies contained no more than 25 recruits, in contrast to recruit training where companies contain 80 or more recruits.
2. REPORT instructors maintained an informal atmosphere and encouraged frequent discussions and interchange during classroom activities. In contrast, instruction during recruit training discourages discussion and occurs in a highly structured, sometimes punitive environment.

REPORT training materials and instructional procedures were revised during pilot testing with instructors and at several points during the field test. The revisions consisted of (1) clarifying topics and eliminating excessive or obsolete information from the instructor guides, (2) improving and elaborating on the directions and explanatory notes to be followed by instructors, and (3) adjusting the schedule and sequence of instructional units into a workable, effective combination.

Table 1
Instructional Units in REPORT Program

| Session | Unit Topic | Unit Length (hrs.) |
|----------------------|---|--------------------|
| Day 1 (Morning) | Introduction and orientation: What is REPORT? | 1.0 |
| | Introduction and orientation: Recruit training preview | 3.0 |
| Day 1 (Afternoon) | Communications: Listening | 1.5 |
| | Career selection and advancement: Classification | 2.0 |
| Day 2 (Morning) | The chain of command in RTC | 1.5 |
| | Group skills: Teamwork in recruit training | 1.0 |
| | Communications: Note-taking and study skills | 1.5 |
| Day 2 (Afternoon) | Military information: Terms, times, and insignia | 1.0 |
| | Career selection and advancement: Advancement | 1.5 |
| | Test-taking skills: Testing procedures (and practice test) | 1.5 |
| Day 3 (Morning) | Nonstandard events: The purpose and nature of nonstandard events in recruit training | 1.5 |
| | The Uniform Code of Military Justice: Navy regulations | 1.5 |
| | Life management skills: Navy goals and resources | 0.5 |
| | Review and concluding remarks: Wrapup of REPORT and preparation for joining regular company | 0.5 |
| | | 19.5 |

Test of REPORT Program

Instructor Training

REPORT instructors were six experienced company commanders at RTC San Diego selected by RTC personnel and assigned to REPORT without collateral duties. The instructors were trained in August and September 1980. After the instructors discussed the philosophy and training approach of REPORT, they practiced delivering the instructional units to each other and to small groups of recruits. Instructor performance was critiqued, objectives and content were clarified as necessary, and units needing revisions were identified and subsequently modified. Following these practice sessions, the instructors delivered the training under realistic conditions to a full class of non-school-guaranteed recruits. Based on the results of this pilot test, the four instructors who were able to present the units in the manner desired were assigned full-time to classroom

instruction; and the other two, to leading REPORT companies in their military and barracks routines.¹

Field Test Procedures

All recruits arriving at RTC San Diego without an "A" school guarantee from October 1980 through February 1981 (N = 719) were assigned on a random basis to either the REPORT (N = 484) or the control group (N = 235). Those assigned to the REPORT group were advised of their selection shortly after arrival; those assigned to the control group completed R&O and were assigned to their regular companies. The REPORT recruits also completed R&O in the normal fashion and then were pulled out to participate in the 3-day program: They spent 2½ days in actual instruction, and devoted ½ day to final barracks cleanup, packing seabags, and moving to R&O for assignment to their regular company.

During the testing period, 22 groups of between 15 and 25 men participated in REPORT. The size of the groups fluctuated according to the availability of non-school-guaranteed recruits and the volume of recruits arriving at RTC San Diego. Each group was assigned to one of the REPORT instructors, who supervised the recruits from the time they were assigned to the program until they were released to their regular company commanders.

Evaluation of REPORT Program

The REPORT program was evaluated by (1) assessing attitudes during recruit training, (2) tracking attrition during training and fleet assignment, (3) assessing performance during training and fleet assignment, and (4) conducting a cost-benefit analysis.

Attitudes During Recruit Training

The following attitudinal data were collected from REPORT participants and instructors during the program and from REPORT recruits, control recruits, and company commanders during recruit training:

1. All 484 REPORT participants completed a questionnaire in which they rated the adequacy of the time devoted to the instructional units, the clarity of presentations, and the usefulness and relevance of the program. In addition, instructors completed rating forms on each recruit's performance and behavior while in REPORT.

2. Seventy-four REPORT recruits were interviewed while they were assigned to their regular recruit training companies about their experiences in recruit training and the positive and negative ways in which REPORT had affected them. The recruits also rated the usefulness of the training units based on their experiences since leaving REPORT.

3. A sample of 183 REPORT and 72 control recruits completed a follow-up survey covering various aspects of recruit training performance and expectations about completing Navy service. The purpose of the survey was to identify the problems experienced by and advantages provided to REPORT recruits as a result of participating in the program.

¹A 3-day training course for REPORT instructors was later developed by the American Institutes for Research under contract N66001-83-C-0345.

4. A sample of 18 company commanders with REPORT recruits under their supervision were asked to evaluate the strengths and weaknesses of those recruits in specific areas of recruit training performance.

Questionnaire and interview responses were tabulated for each group, and means and frequencies calculated as appropriate.

Training and Fleet Attrition

Military personnel records at RTC San Diego were used to identify REPORT and control recruits who attrited during R&O, recruit training, and apprentice training. The September 1981 version of the survival tracking file (STF) (Gay & Borack, 1982), a longitudinal data file containing demographic and military experience information on Navy enlisted personnel, was used to identify any recruits who attrited prior to reporting to the fleet. Fleet attrition was tracked using quarterly updates of the STF through June 1983.

An attrite was defined as an individual who was discharged from active duty prior to the end of obligated service. A deserter was considered to be an attrite if he was discharged after he deserted or if he was in desertion status as of June 1983. Length of service (LOS) was defined as follows:

1. For individuals on active duty--The number of months between their most recent active duty service date (ADSD) on the STF and June 1983.
2. For individuals who were discharged or who had deserted and were discharged--The number of months between the ADSD as of the quarter of discharge and the date of discharge.
3. For individuals in desertion status as of June 1983--The number of months from the most recent ADSD to the date of desertion.

Because all recruits participate in a classification interview during recruit training, both REPORT and control recruits could be assigned to an "A" school if they met the qualifications. As a result, a number of recruits in both groups attended an "A" school instead of seaman, airman, or fireman apprentice training following recruit training. Thus, both groups contained GENDET-destined and "A" school-destined recruits. Although the STF contained school history information, "A" school status could not be determined reliably from the data available. It was not possible to determine from the STF if recruits who had attrited during recruit training were GENDET- or "A" school-destined or if recruits who attended an "A" school successfully completed their training.

To resolve the problems in determining "A" school status, the number of GENDET-destined and "A" school-destined recruits within the REPORT and control groups who attrited during recruit training was estimated from the recruit training and post-recruit training attrition rates by mental category, race, and education level. This procedure made it possible to identify and track a GENDET-destined cohort within the REPORT and control groups and to estimate the effectiveness of the program for the group for which it was designed. Also, because of the problems in determining "A" school status, the "A" school-destined cohorts within both groups included recruits who graduated from an "A" school as well as those who were disenrolled. "A" school disenrollees report to the fleet as GENDETs and experience high attrition rates similar to those of other members of the GENDET force. Since the number of "A" school graduates and disenrollees in each cohort

could not be determined, the evaluation of REPORT effectiveness with "A" school-destined recruits was limited to a comparison of the training attrition of the "A" school cohorts in each group.

Attrition was tracked from the month of enlistment through June 1983. Members of the REPORT and control groups had enlisted between October 1980 and January 1981 and so had completed between 29 and 32 months of service by the end of the tracking period. To equate LOS within and between the two groups, attrition was tracked across 29 months of service; discharges and desertions that occurred after that time were not included in the evaluation.

Training, fleet, and total attrition were recorded for the full REPORT and control groups and for the GENDET-destined cohorts in each group. Training attrition included attrition during recruit training and either "A" school or apprentice training and was measured from the time REPORT and control recruits were assigned to their regular recruit companies until they reported to their first fleet assignment. Attrition during R&O was calculated but excluded from training attrition because it occurred before REPORT recruits participated in the 3-day program. Fleet attrition was measured from the completion of training through month 29 of the tracking period. Total attrition was the sum of training and fleet attrition.

Attrition analyses were conducted separately for the full REPORT and control groups and for the GENDET-destined cohorts in each group. In both analyses, the equivalence of REPORT and control recruits in terms of mental category, race, and education level was checked using χ^2 tests. In the analyses of the full groups, mean training, fleet, and total attrition rates were calculated, and differences in attrition rates between the REPORT and control recruits were compared using z tests. Mean attrition rates were also calculated for the REPORT and control groups during recruit training, apprentice training, and "A" school training and for apprentice training graduates and "A" school attendees during fleet assignment.

In the analysis of the GENDET-destined cohorts, mean training, fleet, and total attrition rates were calculated for the cohorts as a whole and for subgroups based on mental category, race, and education level, and differences in attrition were compared using z tests. Mean attrition rates during recruit and apprentice training were also calculated for the cohorts as a whole and for the subgroups based on demographics. In addition, survival rates for the REPORT and control cohorts were computed based on LOS as of June 1983. Cumulative survival distributions were plotted and compared using the generalized Wilcoxon test developed by Breslow (1970).

Training and Fleet Performance

Military personnel records were used to obtain training time and special unit history during recruit and apprentice training for REPORT and control recruits. The mean time spent in recruit training and the frequency of administrative actions taken were calculated for the full REPORT and control groups and for the recruit training graduates and attrites in each group. Similar analyses of apprentice training performance were not carried out because of the small number of attrites in the REPORT and control groups.

The supervisors of REPORT and control group members on active duty in June 1983 were asked to evaluate their fleet performance on such variables as work performance, quality, and motivation, supervision required, military conduct, and disciplinary record. In addition, they were asked to check the current status of the individual (e.g., rated petty officer, designated striker) and to indicate whether they would recommend the individual

for reenlistment. Separate analyses of the questionnaire responses were conducted for the full REPORT and control groups and for the GENDET destined cohorts in each group. In both analyses, the frequency of responses to each question was tabulated, and the distribution of responses for REPORT and control group members was compared using χ^2 tests.

Cost-Benefit Analysis

A cost-benefit analysis was conducted to determine if the benefits associated with the reduction in attrition due to REPORT outweighed the costs of adding the program to the recruit training curriculum. The calculation of benefits used the results for the GENDET destined cohorts since this was the group for which the program was designed. Benefits associated with the "A" school cohorts were not calculated because of small sample size and difficulties in distinguishing "A" school graduates from disenrollees.

In calculating benefits, it was assumed that the Navy was experiencing a shortfall in GENDET personnel² such that REPORT would benefit the Navy by reducing GENDET attrition. Cumulative survival rates from the survival analysis were applied to two cohorts of 1,000 recruits to obtain the number of man-months of service gained as a result of participating in REPORT. As the first 3 months of service of a GENDET destined recruit are devoted to training, they were considered to be nonproductive to the Navy in the analysis. Any gain in man-months for this period due to lower attrition represented an additional cost of program implementation.

Benefits in terms of productivity for the Navy were assumed to occur after the individual completed training and were reflected in the number of additional man-months gained due to lower attrition after month 3 of service. The calculation of benefits disregarded all sources of cost avoidance and savings and, therefore, underestimated the actual benefits associated with attrition reduction.

Military pay and allowances were used in the analysis as a proxy for the value of an individual's productivity.³ To value the number of man-months of gain, the combined distribution of GENDET destined recruits in the REPORT and control cohorts across pay grades and months of service was generated. This distribution was combined with the appropriate monthly pay and allowances figures and applied to the man-months of gain to obtain the dollar benefits associated with reducing attrition. A discount rate of 10 percent, as required by the Economic Analysis Handbook (1980), was used to obtain the present value of the benefits generated across the tracking period. Benefit calculations were limited to the time period for which attrition data were available so that actual pay and allowances figures and actual distributions of personnel across pay grades could be applied; benefits accruing to the end of enlistment were not projected because of difficulties in making assumptions about future compensation and pay grade distributions.

²Data available for January 1984 indicated that the Navy had 84.1 percent of the personnel to fill the GENDET billets available.

³At this writing, no agreement exists on how to monetize the benefits of service time. Therefore, it is assumed that productivity is normally distributed around the mean pay and allowances. Thus, since some GENDETs fail to produce at a level that equals their pay and allowances while others produce above this figure, it was considered reasonable to apply the mean pay and allowances to the benefits accruing from additional service time.

In addition, benefit calculations were based on a cohort of 1,000 GENDET-destined recruits rather than on the annual input of recruits who arrive at the RTC without an "A" school guarantee. As a result, the dollar value of the benefits computed in the analysis represent only a fraction of the value that would accrue across an entire enlistment with the annual input of non-school-guaranteed recruits.

Cost estimates were generated for implementing REPORT as a 2- and 3-day program with 25 students per class and as a 3-day program with 84 students per class. In each scenario, it was assumed that (1) REPORT would operate as an add-on to the recruit training curriculum, (2) participation would be limited to recruits who arrived at the RTC without an "A" school guarantee, and (3) the 2-day program with 25 students per class and the 3-day program with 84 students per class would have the same impact as the program that was field tested. Implementation costs included (1) a share of the research and development (R&D) costs to develop REPORT, (2) a share of the curriculum development costs to prepare REPORT for implementation, (3) a share of the annual curriculum maintenance costs for REPORT, (4) a share of the costs to train company commanders to be REPORT instructors, (5) recruit training costs associated with adding the program to the recruit training curriculum, and (6) recruit and apprentice training costs incurred as a result of reduced attrition during the first 3 months of service. Implementation costs were generated on the basis of a cohort of 1,000 GENDET-destined recruits and so may overestimate actual costs of offering the program to the annual input of recruits who arrive at the RTC without an "A" school guarantee.

The R&D costs for REPORT were estimated to be \$600,000, and the curriculum development costs at \$6,000 per hour of instruction.⁴ The share of these costs to be applied to a cohort of 1,000 GENDET-destined recruits was based on an annual input of 25,000 non-school-guaranteed recruits and a program life of 10 years. In estimating curriculum maintenance costs, it was assumed that five percent of the curriculum would need to be revised annually, at a cost of \$6,000 per hour of instruction. In estimating instructor costs, it was assumed that REPORT instructors would be E-7 company commanders who would receive 3 days of training before offering the program.

Because a portion of the recruits obtained an "A" school guarantee during recruit training, the costs of adding REPORT to the recruit training curriculum were based on the number of GENDET-destined and "A" school-destined participants needed to obtain a cohort of 1,000 GENDET-destined recruits. The percentage of GENDET-destined recruits in the combined REPORT and control groups was used to estimate this number.

Recruit training costs excluding trainee pay and allowances for FY78 were obtained from McConnell and McNichols (1979) and inflated to FY81 dollars. These figures were based on an 84-man company; they were used in calculating the recruit training costs associated with offering REPORT to an 84-student class and the recruit training costs associated with reduced attrition during the first 3 months of service. To estimate the costs for a 25-student class, the military pay component of the recruit training costs in McConnell and McNichols was adjusted proportionately and combined with the operations and maintenance component; the total was inflated to FY81 dollars.

⁴This figure reflects the costs associated with curriculum development for expanding the apprentice training curriculum from a 12- to 20-day program; it was provided during planning meetings in September 1982 to consider implementation of the RETAIN programs.

Apprentice training costs excluding trainee pay and allowances for FY83 were obtained from Frankel and Butler (1983) and deflated to FY81 dollars; training costs for seaman apprentices were used in the analysis because they comprise about half of the GENDET force. The calculation of the costs to train instructors and to offer REPORT was based on 21 training days per month and 252 training days per year. The costs associated with trainee pay and allowances were calculated from the distribution of pay grades and months of service used in the computation of benefits. Because the costs associated with reduced attrition were incurred during the first 3 months of the tracking period, a discount rate of 10 percent was applied to obtain the present value of the costs.

Benefit-to-cost ratios were calculated for the three versions of REPORT. In addition, net benefit over time was plotted for the 3-day program with 25 students per class to determine the point at which the costs of implementing REPORT were offset by the benefits associated with the man-months of service gained. Cumulative implementation costs were calculated by assuming that the R&D, curriculum development, curriculum maintenance, instructor training, and recruit training costs to offer REPORT were incurred at month 0 of the tracking period and that the additional recruit and apprentice training costs associated with reduced attrition were incurred at months 2 and 3. Cumulative benefits were calculated from the start of month 4 through month 29 of the tracking period.

RESULTS

This section describes the impact of the program on (1) all of the recruits who participated in the REPORT program and (2) those recruits who were GENDET-destined. The analyses of the full REPORT and control groups described attitudes during recruit training and compared training attrition, fleet attrition, training performance, and fleet performance. The analyses of the GENDET-destined REPORT and control cohorts compared training attrition, fleet attrition, and fleet performance and determined the cost effectiveness of the program.⁵

Comparison of REPORT and Control Groups

Attitudes During Recruit Training

The positive and negative outcomes associated with the program as perceived by REPORT recruits, control recruits, and company commanders are summarized below. Detailed results are provided in Shettel et al. (1982).

1. REPORT recruits were consistently enthusiastic about having participated in the program; nearly all of them left the program with a positive attitude toward the Navy and the possibility of success in recruit training. Their positive expectations about recruit training were borne out after they had an opportunity to apply what they had learned in REPORT.

⁵Attitudes and performance during recruit training were not analyzed because the procedures used in the evaluation estimated the number of recruit training attrites but did not identify the individual attrites in each cohort.

2. REPORT recruits often perceived themselves as being better prepared, better informed, and better motivated than did the control recruits. In addition, REPORT recruits volunteered for the position of recruit petty officer--and were selected--more frequently than did control recruits.

3. In terms of positive outcomes associated with program participation, REPORT recruits indicated that they were less subject to worry and uncertainty in areas such as inspections, test taking, classification, and ability to master and get through recruit training.

4. REPORT recruits described as negative experiences being labelled as different or an outsider when they joined their regular company, spending additional days in R&O waiting for their REPORT class to convene, and having to adjust to their regular company after adapting to REPORT. The majority of REPORT recruits considered that the disadvantages associated with the extra time taken by REPORT were offset by the benefits associated with what they learned in the program.

5. The company commander responses were consistent with the self-perceived strengths and weaknesses described by REPORT participants.

Training and Fleet Attrition

Table 2 shows that the REPORT and control recruits did not differ significantly in demographic characteristics at the start of recruit training. Also, the demographic profile of the two groups was similar to that of the population of male recruits who entered the Navy without a school guarantee in FY79.

The recruits in both groups represented the full range of mental ability with about half in mental category III and about 20 percent in categories I and II (Table 2). This aptitude distribution was somewhat lower than for Navy recruits in general but was much more heterogeneous than might be expected of non-school-guaranteed recruits.

Table 3 presents the R&O, training, fleet, and total attrition rates for the REPORT and control groups as of June 1983. REPORT had a positive impact on training attrition with the attrition rate for REPORT group being 3.9 percent lower than that for the control group. REPORT participants had a lower attrition rate than did control recruits during all three types of training--recruit, apprentice, and "A" school. However, the difference in overall training attrition was not statistically reliable.

As of June 1983, after more than 2 years in the fleet, the overall attrition rate for the REPORT group was 2.0 percent lower than that for the control group; thus, about half of the REPORT group's advantage at the end of training had been lost by the end of the tracking period. The differences between the two groups in fleet and total attrition were not statistically reliable.

The fleet attrition rates for apprentice training graduates in the REPORT and control groups were about the same (16.5 vs. 16.2%); however, the fleet attrition rate for "A" school enrollees was 1.6 percent higher for the REPORT group than for the control group (4.6 vs. 3.0%). These results suggest that, for REPORT recruits who were apprentice training graduates, the retention advantage experienced during training continued into the fleet assignment and was maintained after 29 months of service. No attempt was made to explain the results for the "A" school enrollees.

Table 2
Demographic Characteristics of REPORT and Control Groups

| Characteristic | REPORT Group ^a (N = 474) | | Control Group (N = 235) | | χ^2 Value ^b |
|-----------------------------------|--|------|----------------------------|------|--------------------------------|
| | N | % | N | % | |
| Mental category: | | | | | .57 |
| I and II | 103 | 21.7 | 46 | 19.6 | |
| III upper | 105 | 22.2 | 51 | 21.7 | |
| III lower | 128 | 27.0 | 69 | 29.4 | |
| IV | 135 | 28.5 | 67 | 28.5 | |
| Missing data | 3 | 0.6 | 2 | 0.9 | |
| Race: | | | | | 3.89 |
| Caucasian | 318 | 67.1 | 163 | 69.4 | |
| Black | 81 | 17.1 | 47 | 20.0 | |
| Other | 75 | 15.8 | 25 | 10.6 | |
| Education level: | | | | | 1.91 |
| Non-high-school graduate | 80 | 16.9 | 37 | 15.7 | |
| GED ^c recipient | 74 | 15.6 | 34 | 14.5 | |
| High school graduate ^d | 319 | 67.3 | 162 | 68.9 | |
| Missing data | 1 | 0.2 | 2 | 0.9 | |

Note. Percentages do not always total 100 due to rounding.

^aSocial security numbers (SSNs) were not available for 10 members of the REPORT group.

^bThe differences were not significant.

^cGED = graduation equivalency diploma.

^dIncludes those who had attended college.

Table 3
Attrition Rates for REPORT and Control Groups

| Type of Attrition | REPORT Group (N=474) ^a | | Control Group (N=235) | | % Diff. | z Value ^b |
|---|--------------------------------------|--------|--------------------------|--------|---------|-------------------------|
| | N | % | N | % | | |
| Receiving and outfitting (R&O) attrition | 9 | 1.9 | 6 | 2.6 | -0.7 | -.64 |
| Training attrition | 48 | 10.0 | 33 | 14.0 | -3.9 | -1.56 |
| Recruit training | (37) | (7.8) | (21) | (8.9) | (-1.1) | |
| Apprentice training | (8) | (1.7) | (9) | (3.8) | (-2.1) | |
| "A" school | (3) | (0.6) | (3) | (1.3) | (-0.7) | |
| Fleet attrition | 100 | 21.1 | 45 | 19.1 | +2.0 | +.65 |
| Apprentice training graduates | (78) | (16.5) | (38) | (16.2) | (+0.3) | |
| "A" school enrollees (graduates and disenrollees) | (22) | (4.6) | (7) | (3.0) | (+1.6) | |
| Total training and fleet attrition | 148 | 31.2 | 78 | 33.2 | -2.0 | -.56 |

Note. Percentages do not always total correctly due to rounding.

^aSSNs could not be verified for 10 members of the REPORT group.

^bThe differences, which were based on one-tailed tests, were not significant.

Training and Fleet Performance

Table 4 describes recruit training performance in terms of training days and special unit assignments for the members of the REPORT and control groups who attended recruit training and for the recruit training graduates and attrites in both groups. Very few of the recruits in the REPORT and control groups experienced the administrative actions listed in Table 4. However, for the groups as a whole and for the graduates of both groups, the REPORT recruits experienced fewer of these actions and spent fewer days in special units as a result of these actions than did the control recruits. For the recruit training attrites in both groups, the pattern of differences was less consistent. Although REPORT attrites generally experienced fewer administrative actions than did control attrites, the number of days spent in special units was about the same for both groups.

The advantages associated with the REPORT program for recruit training graduates had a cost in terms of the additional time that these recruits spent at RTC as a result of the program. REPORT recruits had nearly 5 days added to their time at the start of recruit training: 3 days in the program and almost 2 days waiting in R&O for their REPORT class to convene. One day of this added time was offset by the reduction in special unit days for REPORT recruits compared to control recruits. For recruit training

Table 4

Recruit Training Performance of REPORT and Control Groups

| Item | Total Groups ^a | | | Recruit Training Graduates | | | Recruit Training Attrites | | |
|---|---------------------------|----------------------|----------------|----------------------------|----------------------|----------------|---------------------------|---------------------|----------------|
| | REPORT (N = 465) | Control (N = 229) | Diff. | REPORT (N = 428) | Control (N = 208) | Diff. | REPORT (N = 37) | Control (N = 21) | Diff. |
| Time required (days): | | | | | | | | | |
| In R&O/waiting for REPORT | 10.9 | 9.0 | +1.9 | 11.0 | 9.0 | +2.0 | 10.1 | 8.8 | +1.3 |
| In REPORT | 3.0 | 0.0 | +3.0 | 3.0 | 0.0 | +3.0 | 3.0 | 0.0 | +3.0 |
| In recruit training | 49.3 | 49.0 | +0.3 | 52.1 | 51.6 | +0.5 | 17.0 | 23.0 | -6.0 |
| In special units: | | | | | | | | | |
| Disciplinary status | 1.0 (0.5) | 2.0 (0.9) | -1.0 (-0.4) | 0.2 (0.1) | 1.1 (0.4) | -0.9 (-0.3) | 10.0 (4.7) | 9.8 (5.9) | +0.2 (-1.2) |
| Medical status | (0.5) | (0.7) | (-0.2) | (0.1) | (0.3) | (-0.2) | (5.0) | (3.9) | (+1.1) |
| Academic remedial training | (0.1) | (0.4) | (-0.4) | (0.1) | (0.4) | (-0.4) | (0.1) | (0.0) | (+0.1) |
| Leave | (0.1) | (0.1) | (0.0) | (0.1) | (0.1) | (0.0) | (0.0) | (0.0) | (0.0) |
| Unauthorized absence | (0.1) | (0.1) | (0.0) | (0.1) | (0.1) | (0.0) | (0.2) | (0.1) | (+0.2) |
| Total | 64.2 | 60.0 | +4.2 | 66.3 | 61.7 | +4.6 | 40.1 | 41.6 | -1.5 |
| Administrative actions taken (N per 100 recruits): | | | | | | | | | |
| Disciplinary problem | 9.2 | 18.3 | -9.1 | 2.8 | 8.2 | -5.4 | 83.8 | 119.0 | -35.2 |
| Medical problem | 5.6 | 9.6 | -4.0 | 2.3 | 5.3 | -3.0 | 43.2 | 52.4 | -9.2 |
| Academic remedial training | 4.9 | 5.2 | -0.3 | 4.9 | 5.8 | -0.9 | 5.4 | 0.0 | +5.4 |
| Leave | 0.2 | 1.3 | -1.1 | 0.2 | 1.4 | -1.2 | 0.0 | 0.0 | 0.0 |
| Unauthorized absence | 0.6 | 3.9 | -3.3 | 0.2 | 3.4 | -3.2 | 5.4 | 9.5 | -4.1 |
| Captain's mast | 7.1 | 8.7 | -1.6 | 6.5 | 8.2 | -1.7 | 13.5 | 14.3 | -0.8 |
| Total | 27.6 | 47.0 | -19.4 | 16.9 | 32.3 | -15.4 | 151.3 | 195.2 | -43.9 |

Note. The values in parentheses do not always total correctly due to rounding.

^aThe numbers exclude 9 members of the REPORT group and 6 members of the control group who attrited during R&O.

attrites, the number of days spent in REPORT and waiting in R&O was more than offset by the fact that REPORT attrites left recruit training 6 days earlier than did control attrites. The results for the recruit training graduates were expected, given the kinds of behaviors targeted by REPORT; no explanation was available for the results for the attrites.

Table 5 presents the results of the questionnaire sent to supervisors of REPORT and control group members on active duty in June 1983. Responses were received from the supervisors of 241 of 317 REPORT group members (76.0%) and 120 of 151 control group members (79.5%). Supervisors did not differ in their assessments of the two groups on the six performance variables being evaluated. In addition, REPORT and control group members did not differ in their success at striking for or obtaining a rating. Supervisors, however, were more positive in recommending reenlistment of the REPORT group compared to the control group.

Comparison of GENDET-destined REPORT and Control Cohorts

Training and Fleet Attrition

Table 6 presents the demographic characteristics of the GENDET-destined cohorts within the REPORT and control groups. The two cohorts did not differ significantly on any of the variables.

Table 7 presents attrition rates for the GENDET-destined cohorts as a whole and by mental category, race, and education level. The training attrition rate for the REPORT cohort was 4.3 percent lower than that for control cohort, with most of the difference occurring during apprentice training. The total attrition rate for the REPORT cohort was 5.4 percent lower than that for the control cohort. However, the differences in training and total attrition were not statistically reliable. Figure 1, which presents the attrition rate by LOS for the two cohorts, shows that the reduction in attrition experienced by REPORT participants during training was sustained after 29 months of service. However, the survival analysis conducted on the LOS data indicated no difference in the survival curves for the two cohorts (generalized Wilcoxon test = 1.38, df = 1, $p < .12$, one-tailed test).

The training attrition rate for the REPORT cohort was lower than that for the control cohort in all demographic categories except mental category IV. The difference in training attrition rates between the REPORT and control cohorts increased during fleet assignment for cohort members who were in mental category III upper, those who were noncaucasian, and those who were high school graduates. The difference in training attrition rates decreased during fleet assignment for cohort members who were in mental categories I and III and III lower, those who were caucasian, and those who were non-high-school graduates. The higher training attrition rate for members of the REPORT cohort who were in mental category IV was offset by a lower attrition rate during fleet assignment. After 29 months of service, the total attrition rate for the REPORT cohort was lower than that for the control cohort in all demographic categories. The only statistically reliable differences, however, were in training attrition for cohort members in mental categories I and II and III lower and in total attrition for cohort members who were high school graduates.

Table 5
Questionnaire Completed by Supervisors of REPORT and Control
Group Members on Active Duty in June 1983

| Item | REPORT Group | | Control Group | | χ^2 Value |
|---|-----------------|-------|------------------|-------|-------------------|
| | N | % | N | % | |
| 1. Ability to perform tasks assigned | | | | | 2.88 |
| Unacceptable | 4 | 1.7 | 2 | 1.7 | |
| Marginal | 12 | 5.1 | 11 | 9.2 | |
| Satisfactory | 140 | 59.3 | 63 | 52.5 | |
| Outstanding | 80 | 33.9 | 44 | 36.7 | |
| | 236 | 100.0 | 120 | 100.1 | |
| 2. Work quality on assigned tasks | | | | | 0.79 |
| Unacceptable | 3 | 1.3 | 2 | 1.7 | |
| Marginal | 11 | 4.6 | 7 | 5.8 | |
| Satisfactory | 128 | 54.0 | 68 | 56.7 | |
| Outstanding | 95 | 40.1 | 43 | 35.8 | |
| | 237 | 100.0 | 120 | 100.0 | |
| 3. Work motivation | | | | | 0.15 |
| Unacceptable | 3 | 1.3 | 1 | 0.8 | |
| Marginal | 27 | 11.4 | 14 | 11.7 | |
| Satisfactory | 99 | 41.8 | 51 | 42.5 | |
| Outstanding | 108 | 45.6 | 54 | 45.0 | |
| | 237 | 100.1 | 120 | 100.0 | |
| 4. Supervision required to complete assigned tasks | | | | | 0.88 |
| Constant | 5 | 2.1 | 4 | 3.3 | |
| Excessive | 16 | 6.7 | 8 | 6.7 | |
| Average | 104 | 43.9 | 48 | 40.0 | |
| Minimum | 112 | 47.3 | 60 | 50.0 | |
| | 237 | 100.0 | 120 | 100.0 | |
| 5. Military bearing and conduct | | | | | 0.99 |
| Unacceptable | 8 | 3.4 | 6 | 5.0 | |
| Marginal | 42 | 17.7 | 22 | 18.3 | |
| Satisfactory | 115 | 48.5 | 53 | 44.2 | |
| Outstanding | 72 | 30.4 | 39 | 32.5 | |
| | 237 | 100.0 | 120 | 100.0 | |
| 6. Disciplinary record | | | | | 4.05 |
| Unacceptable | 21 | 8.8 | 10 | 8.4 | |
| Marginal | 46 | 19.3 | 20 | 16.8 | |
| Satisfactory | 45 | 18.8 | 14 | 11.8 | |
| Outstanding | 127 | 53.1 | 75 | 63.0 | |
| | 239 | 100.0 | 119 | 100.0 | |
| 7. Considering this person's overall record of performance and conduct, would you recommend him for reenlistment? | | | | | 8.13* |
| Definitely not | 10 | 4.3 | 5 | 4.2 | |
| Probably not | 17 | 5.1 | 14 | 11.9 | |
| Probably yes | 65 | 27.7 | 21 | 17.8 | |
| Definitely yes | 148 | 63.0 | 78 | 66.1 | |
| | 235 | 100.1 | 118 | 100.0 | |
| 8. Individual's current status | | | | | 7.69 |
| Rated petty officer | 130 | 55.6 | 69 | 59.0 | |
| Designated striker | 50 | 21.4 | 18 | 15.4 | |
| Striking for a rating | 36 | 15.4 | 13 | 11.1 | |
| Attending "A" or "C" school | 5 | 2.1 | 3 | 2.6 | |
| Not striking | 13 | 5.6 | 14 | 12.0 | |
| | 234 | 100.1 | 117 | 100.1 | |

Notes.

1. Percentages do not always total 100 due to rounding.
2. N varies with the number of valid responses received for each item.

*p < .05.

Table 6
Demographic Characteristics of GENDET-destined REPORT
and Control Cohorts

| Characteristic | REPORT Cohort (N = 352) | | Control Cohort (N = 164) | | χ^2 Value ^a |
|---|----------------------------|------|-----------------------------|------|--------------------------------|
| | N | % | N | % | |
| Mental category: | | | | | 3.11 |
| I and II | 72 | 20.5 | 25 | 15.2 | |
| III upper | 77 | 21.9 | 34 | 20.7 | |
| III lower | 98 | 27.8 | 51 | 31.1 | |
| IV | 103 | 29.3 | 52 | 31.7 | |
| Missing data | 2 | 0.6 | 2 | 1.2 | |
| Race: | | | | | .67 |
| Caucasian | 240 | 68.2 | 117 | 71.3 | |
| Noncaucasian (black & other) | 112 | 31.8 | 47 | 28.7 | |
| Education level: | | | | | .16 |
| Non-high-school graduate or GED ^b recipient | 122 | 34.7 | 54 | 32.9 | |
| High school graduate ^c | 230 | 65.3 | 110 | 67.1 | |

Note. Percentages do not always total 100 due to rounding.

^aThe differences were not significant.

^bGED = graduation equivalency diploma.

^cIncludes those who had attended college.

Table 7

Attrition Rates for GENDET-destined Cohorts Within REPORT and Control Groups by Total Cohort and Various Demographic Variables

| Item | REPORT Cohort | | Control Cohort | | % Diff. | z Value |
|--|---------------|--------|----------------|--------|---------|---------|
| | N | % | N | % | | |
| By Total GENDET-destined Cohort | | | | | | |
| Training attrition | 36 | 10.3 | 24 | 14.6 | -4.3 | -1.43 |
| Recruit training | (28) | (8.0) | (15) | (9.1) | (-1.1) | |
| Apprentice training | (8) | (2.3) | (9) | (5.5) | (-3.2) | |
| Fleet attrition | 78 | 22.2 | 38 | 23.2 | -1.0 | -.25 |
| Total attrition ^a | 114 | 32.4 | 62 | 37.8 | -5.4 | -1.20 |
| By Mental Category ^b | | | | | | |
| <u>Mental Category I and II</u> | | | | | | |
| Training attrition | 3 | 4.2 | 4 | 16.0 | -11.8 | -1.97* |
| Recruit training | (3) | (4.2) | (2) | (8.0) | (-3.8) | |
| Apprentice training | (0) | (0.0) | (2) | (8.0) | (-8.0) | |
| Fleet attrition | 20 | 27.8 | 5 | 20.0 | +7.8 | +.76 |
| Total attrition | 23 | 31.9 | 9 | 36.0 | -4.1 | -.38 |
| <u>Mental Category III Upper</u> | | | | | | |
| Training attrition | 7 | 9.1 | 5 | 14.7 | -5.6 | -.88 |
| Recruit training | (6) | (7.8) | (4) | (11.8) | (-4.0) | |
| Apprentice training | (1) | (1.3) | (1) | (2.9) | (-1.6) | |
| Fleet attrition | 21 | 27.3 | 12 | 35.3 | -8.0 | -.85 |
| Total attrition | 28 | 36.4 | 17 | 50.0 | -13.6 | -1.35 |
| <u>Mental Category III Lower</u> | | | | | | |
| Training attrition | 9 | 9.2 | 10 | 19.6 | -10.4 | -1.79* |
| Recruit training | (5) | (5.1) | (6) | (11.8) | (-6.7) | |
| Apprentice training | (4) | (4.1) | (4) | (7.8) | (-3.7) | |
| Fleet attrition | 26 | 26.5 | 12 | 23.5 | +3.0 | +.40 |
| Total attrition | 35 | 35.7 | 22 | 43.1 | -7.4 | -.88 |
| <u>Mental Category IV</u> | | | | | | |
| Training attrition | 15 | 14.6 | 5 | 9.6 | +5.0 | +.88 |
| Recruit training | (12) | (11.7) | (3) | (5.8) | (+5.9) | |
| Apprentice training | (3) | (2.9) | (2) | (3.8) | (-0.9) | |
| Fleet attrition | 11 | 10.7 | 9 | 17.3 | -6.6 | -1.16 |
| Total attrition | 26 | 25.2 | 14 | 16.9 | -1.7 | -.23 |
| By Racial Category | | | | | | |
| <u>Caucasian</u> | | | | | | |
| Training attrition | 30 | 12.5 | 19 | 16.3 | -3.8 | -.97 |
| Recruit training | (22) | (9.2) | (14) | (12.0) | (-2.8) | |
| Apprentice training | (8) | (3.3) | (5) | (4.3) | (-1.0) | |
| Fleet attrition | 65 | 27.1 | 31 | 26.5 | +0.6 | +.12 |
| Total attrition | 95 | 39.6 | 50 | 42.7 | -3.1 | -.55 |
| <u>Noncaucasian</u> | | | | | | |
| Training attrition | 6 | 5.4 | 5 | 10.6 | -5.2 | -1.18 |
| Recruit training | (6) | (5.4) | (1) | (2.1) | (+3.3) | |
| Apprentice training | (0) | (0.0) | (4) | (8.5) | (-8.5) | |
| Fleet attrition | 13 | 11.6 | 7 | 14.9 | -3.3 | -.58 |
| Total attrition | 19 | 17.0 | 12 | 25.5 | -8.5 | -1.23 |
| By Education Level | | | | | | |
| <u>Non-high-school Graduate or GED^c Recipient</u> | | | | | | |
| Training attrition | 15 | 12.3 | 10 | 18.6 | -6.3 | -1.11 |
| Recruit training | (11) | (9.0) | (7) | (13.0) | (-4.0) | |
| Apprentice training | (4) | (3.3) | (3) | (5.6) | (-2.3) | |
| Fleet attrition | 47 | 38.5 | 18 | 33.3 | +5.2 | +.66 |
| Total attrition | 62 | 50.1 | 28 | 51.9 | -1.8 | -.22 |
| <u>High School Graduate^d</u> | | | | | | |
| Training attrition | 21 | 9.0 | 14 | 12.8 | -3.8 | -1.09 |
| Recruit training | (17) | (7.3) | (8) | (7.3) | (0.0) | |
| Apprentice training | (4) | (1.7) | (6) | (5.5) | (-3.8) | |
| Fleet attrition | 31 | 13.5 | 20 | 18.2 | -4.7 | -1.15 |
| Total attrition | 52 | 22.6 | 34 | 30.9 | -8.3 | -1.66* |

Note. Percentages do not always total correctly due to rounding.

^aTotal attrition is the sum of training and fleet attrition.

^bTest scores were not available for 2 members of the REPORT group and 2 members of the control group. Attrition data for these individuals were not included in the results by mental category.

^cGED = graduation equivalency diploma.

^dIncludes those who had attended college.

*p < .05--based on one-tailed test of significance.

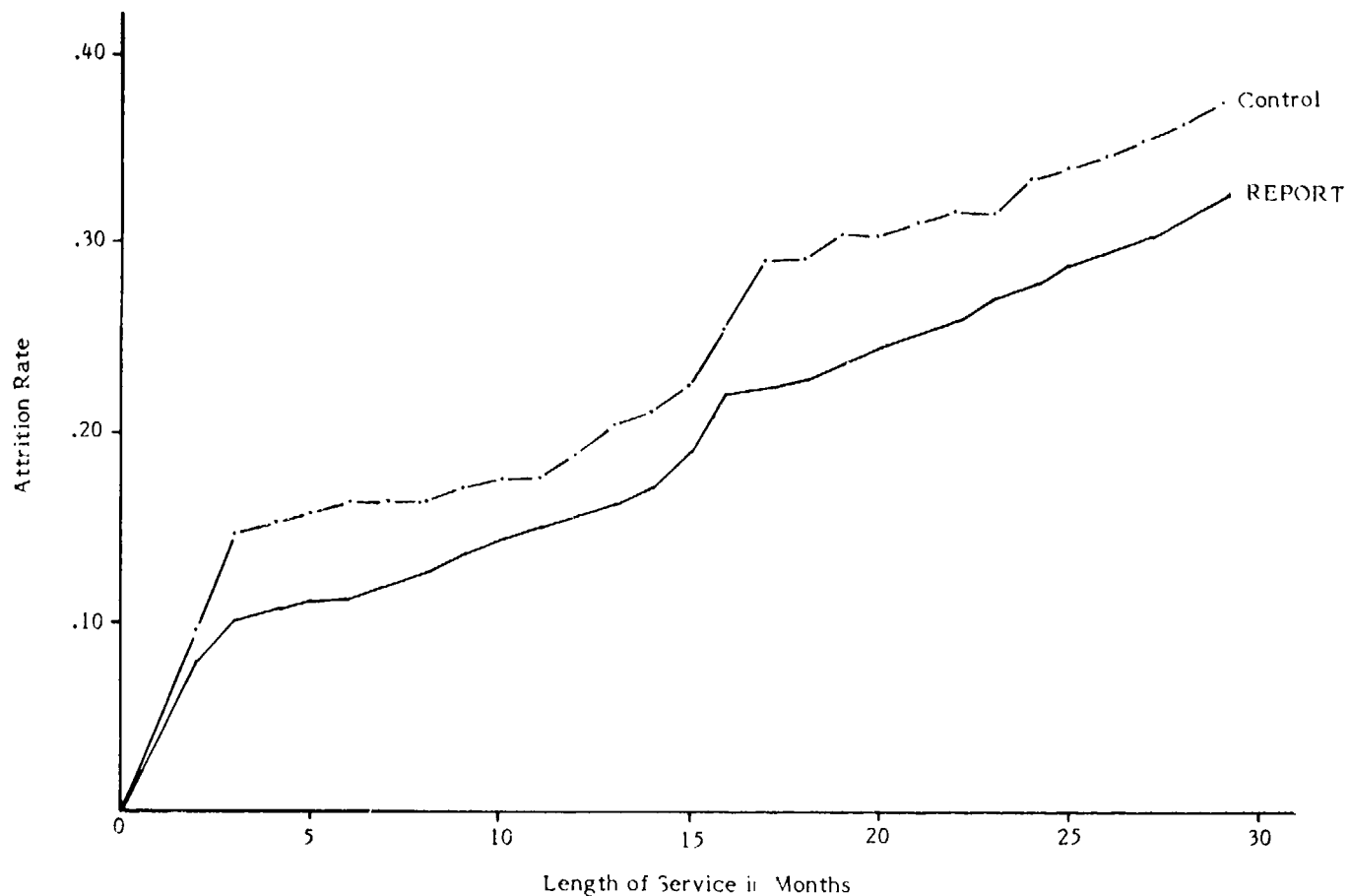


Figure 1. Length of service in months at time of attrition for GENDET-destined REPORT and control cohorts.

Fleet Performance

Table 8 presents the questionnaire results for 178 out of 238 members of the GENDET-destined REPORT cohort (74.8%) and 87 out of 102 members of the GENDET-destined control cohort (85.3%) who were on active duty in June 1983. Supervisors did not differ in their assessments of the two cohorts on the six performance variables evaluated or in their recommendation of cohort members for reenlistment. Further, REPORT and control cohorts did not differ in their success at striking for or obtaining a rating.

Cost-Benefit Analysis

Tables 9 and 10 summarize the estimates of benefits and costs of implementing REPORT. An additional 1,149 man-months of service would be gained during the first 29 months of enlistment for each cohort of 1,000 GENDET-destined REPORT vs. control recruits, given the reduction in attrition obtained when the program was tested. The gain in benefits associated with the additional man-months of service was estimated to be \$802,499. Total implementation costs for offering REPORT to 1,370 recruits (i.e., the number needed to obtain a cohort of 1,000 GENDET-destined recruits) as a 3-day program with 25 students per class were computed to be \$381,509. Based on these figures, REPORT is a cost-effective program with a benefit-to-cost ratio of 2.1 to 1. This ratio should be considered as a conservative estimate of cost-effectiveness, given that the

Table 8
Questionnaire Completed by Supervisors of GENDET-designated
REPORT and Control Cohort Members on Active Duty in June 1983

| Item | REPORT Cohort | | Control Cohort | | χ^2 Value ^a |
|---|---------------|-------|----------------|-------|-----------------------------|
| | N | % | N | % | |
| 1. Ability to perform tasks assigned | | | | | 0.82 |
| Unacceptable | 3 | 1.7 | 2 | 2.3 | |
| Marginal | 8 | 4.5 | 6 | 6.9 | |
| Satisfactory | 107 | 60.5 | 50 | 57.5 | |
| Outstanding | 59 | 33.3 | 29 | 33.3 | |
| | 177 | 100.0 | 87 | 100.0 | |
| 2. Work quality on assigned tasks | | | | | 0.18 |
| Unacceptable | 3 | 1.7 | 2 | 2.3 | |
| Marginal | 7 | 4.0 | 4 | 4.6 | |
| Satisfactory | 101 | 57.1 | 49 | 56.3 | |
| Outstanding | 66 | 37.3 | 32 | 36.8 | |
| | 177 | 100.1 | 87 | 100.0 | |
| 3. Work motivation | | | | | 0.12 |
| Unacceptable | 2 | 1.1 | 1 | 1.2 | |
| Marginal | 23 | 13.0 | 10 | 11.5 | |
| Satisfactory | 74 | 41.8 | 37 | 42.5 | |
| Outstanding | 78 | 44.1 | 39 | 44.8 | |
| | 177 | 100.0 | 87 | 100.0 | |
| 4. Supervision required to complete assigned tasks | | | | | 0.85 |
| Constant | 5 | 2.8 | 3 | 3.5 | |
| Excessive | 11 | 6.2 | 5 | 5.8 | |
| Average | 83 | 46.9 | 36 | 41.4 | |
| Minimum | 78 | 44.1 | 43 | 49.4 | |
| | 177 | 100.0 | 87 | 100.1 | |
| 5. Military bearing and conduct | | | | | 2.06 |
| Unacceptable | 6 | 3.4 | 6 | 6.9 | |
| Marginal | 35 | 19.7 | 14 | 16.1 | |
| Satisfactory | 84 | 47.2 | 40 | 46.0 | |
| Outstanding | 53 | 29.8 | 27 | 31.0 | |
| | 178 | 100.1 | 87 | 100.0 | |
| 6. Disciplinary record | | | | | 4.06 |
| Unacceptable | 13 | 7.3 | 10 | 11.5 | |
| Marginal | 38 | 21.5 | 15 | 17.2 | |
| Satisfactory | 33 | 18.6 | 10 | 11.5 | |
| Outstanding | 93 | 52.5 | 52 | 59.8 | |
| | 177 | 99.9 | 87 | 100.0 | |
| 7. Considering this person's overall record of performance and conduct, would you recommend him for reenlistment? | | | | | 4.02 |
| Definitely not | 7 | 4.0 | 5 | 5.9 | |
| Probably not | 11 | 6.2 | 9 | 10.6 | |
| Probably yes | 50 | 28.3 | 16 | 18.8 | |
| Definitely yes | 107 | 61.6 | 55 | 64.7 | |
| | 177 | 100.1 | 85 | 100.0 | |
| 8. Individual's current status | | | | | 9.34 |
| Rated petty officer | 89 | 50.9 | 48 | 57.1 | |
| Designated striker | 37 | 21.1 | 10 | 11.9 | |
| Striking for a rating | 34 | 19.4 | 13 | 15.5 | |
| Attending "A" or "C" school | 4 | 2.3 | 1 | 1.2 | |
| Not striking | 11 | 6.3 | 12 | 14.3 | |
| | 175 | 100.0 | 84 | 100.0 | |

Notes.

1. Percentages do not always total 100 due to rounding.
2. N varies with the number of valid responses received for each item.

^aThe differences were not significant.

Table 9
Estimated Benefits of REPORT Implementation

| Month of Service | Month | Months of Service Gained | \$ Value of Gain | Discount Period (Years) | Present Value ^a |
|------------------|--------|--------------------------|------------------|-------------------------|----------------------------|
| 0 | Jan 81 | -- | -- | -- | -- |
| 1 | Feb 81 | | | | |
| 2 | Mar 81 | 38 ^b | -- | .17 | -- |
| 3 | Apr 81 | 44 ^b | -- | .25 | -- |
| 4 | May 81 | | | | |
| 5 | Jun 81 | 91 | \$ 65,555 | .42 | \$ 62,983 |
| 6 | Jul 81 | | | | |
| 7 | Aug 81 | | | | |
| 8 | Sep 81 | 116 | 86,158 | .67 | 80,828 |
| 9 | Oct 81 | | | | |
| 10 | Nov 81 | | | | |
| 11 | Dec 81 | 87 | 69,529 | .92 | 63,692 |
| 12 | Jan 82 | | | | |
| 13 | Feb 82 | | | | |
| 14 | Mar 82 | 87 | 70,049 | 1.17 | 62,567 |
| 15 | Apr 82 | | | | |
| 16 | May 82 | | | | |
| 17 | Jun 82 | 134 | 108,583 | 1.42 | 94,838 |
| 18 | Jul 82 | | | | |
| 19 | Aug 82 | | | | |
| 20 | Sep 82 | 196 | 159,495 | 1.67 | 136,026 |
| 21 | Oct 82 | | | | |
| 22 | Nov 82 | | | | |
| 23 | Dec 82 | 158 | 131,917 | 1.92 | 109,857 |
| 24 | Jan 83 | | | | |
| 25 | Feb 83 | | | | |
| 26 | Mar 83 | 138 | 117,197 | 2.17 | 95,300 |
| 27 | Apr 83 | | | | |
| 28 | May 83 | | | | |
| 29 | Jun 83 | 142 | 121,418 | 2.42 | 96,408 |
| | | 1,149 | | | \$802,499 |

^aPresent value (PV) was computed according to the following formula: $PV = \frac{FT}{(1+i)^t}$

where FT = \$ value of gain, i = discount rate of 10 percent, and t = number of years.

^bThese are costs associated with reduced attrition and were not included in calculating gain.

Table 10
Estimated Costs of REPORT Implementation

| Item | Cost (\$) | Discount Period (Years) | Present Value (\$) |
|--|-----------|-------------------------|--------------------|
| 1. Implement REPORT as a 3-day program with 25 students per class | | | |
| a. Share of R&D costs per cohort of 1,000 GENDET-destined recruits | 2,400 | -- | 2,400 |
| b. Share of curriculum development costs per cohort of 1,000 GENDET-destined recruits | 480 | -- | 480 |
| c. Share of annual curriculum maintenance costs per cohort of 1,000 GENDET-destined recruits | 240 | -- | 240 |
| d. Share of instructor training costs per cohort of 1,000 GENDET-destined recruits | 133 | -- | 133 |
| e. Costs to offer REPORT to 1,370 recruits as 3 additional days of recruit training | | | |
| Recruit training costs | 164,975 | -- | 164,975 |
| Trainee pay and allowances | 134,250 | -- | 134,250 |
| f. Costs associated with reduced attrition during recruit and apprentice training per cohort of 1,000 GENDET-destined recruits | | | |
| Recruit training costs | 15,086 | .17 | 14,844 |
| Trainee pay and allowances during recruit training | 26,336 | .17 | 25,913 |
| Apprentice training costs | 6,908 | .25 | 6,745 |
| Trainee pay and allowances during apprentice training | 32,289 | .25 | 31,529 |
| Total | | | \$381,509 |
| 2. Implement REPORT as a 2-day program with 25 students per class | | | |
| a. Share of R&D costs per cohort of 1,000 GENDET-destined recruits | 2,400 | -- | 2,400 |
| b. Share of curriculum development costs per cohort of 1,000 GENDET-destined recruits | 384 | -- | 384 |
| c. Share of annual curriculum maintenance costs per cohort of 1,000 GENDET-destined recruits | 192 | -- | 192 |
| d. Share of instructor training costs per cohort of 1,000 GENDET-destined recruits | 95 | -- | 95 |
| e. Costs to offer REPORT to 1,370 recruits as 2 additional days of recruit training | | | |
| Recruit training costs | 110,012 | -- | 110,012 |
| Trainee pay and allowances | 89,523 | -- | 89,523 |
| f. Costs associated with reduced attrition during recruit and apprentice training per cohort of 1,000 GENDET-destined recruits | | | |
| Recruit training costs | 15,086 | .17 | 14,844 |
| Trainee pay and allowances during recruit training | 26,336 | .17 | 25,913 |
| Apprentice training costs | 6,908 | .25 | 6,745 |
| Trainee pay and allowances during apprentice training | 32,289 | .25 | 31,529 |
| Total | | | \$281,637 |
| 3. Implement REPORT as a 3-day program with 84 students per class | | | |
| a. Share of R&D costs per cohort of 1,000 GENDET-destined recruits | 2,400 | -- | 2,400 |
| b. Share of curriculum development costs per cohort of 1,000 GENDET-destined recruits | 480 | -- | 480 |
| c. Share of annual curriculum maintenance costs per cohort of 1,000 GENDET-destined recruits | 240 | -- | 240 |
| d. Share of instructor training costs per cohort of 1,000 GENDET-destined recruits | 38 | -- | 38 |
| e. Costs to offer REPORT to 1,370 recruits as 3 additional days of recruit training | | | |
| Recruit training costs | 77,693 | -- | 77,693 |
| Trainee pay and allowances | 134,250 | -- | 134,250 |
| f. Costs associated with reduced attrition during recruit and apprentice training per cohort of 1,000 GENDET-destined recruits | | | |
| Recruit training costs | 15,086 | .17 | 14,844 |
| Trainee pay and allowances during recruit training | 26,336 | .17 | 25,913 |
| Apprentice training costs | 6,908 | .25 | 6,745 |
| Trainee pay and allowances during apprentice training | 32,289 | .25 | 31,529 |
| Total | | | \$294,132 |

assumptions made in the analysis were intended to underestimate benefits and overestimate costs.

Figure 2 presents the net benefit over time for the 3-day program with 25 students per class. Implementation costs, which were incurred from months 0 through 3, are recorded as negative benefits. After month 3, benefits began to offset costs and are recorded as positive benefits. The payback point for REPORT was month 18 of enlistment; benefits occurring after month 18 were pure gain in productive time for the Navy. The differences in fleet attrition between REPORT and control groups were sustained from month 4 through 29 of service; net benefits accruing to the Navy through the end of the tracking period were computed to be \$420,990. If the attrition differences continue through the remainder of the enlistment, as Figure 1 suggests, and if no further costs are incurred, the cost effectiveness of REPORT would continue to increase.

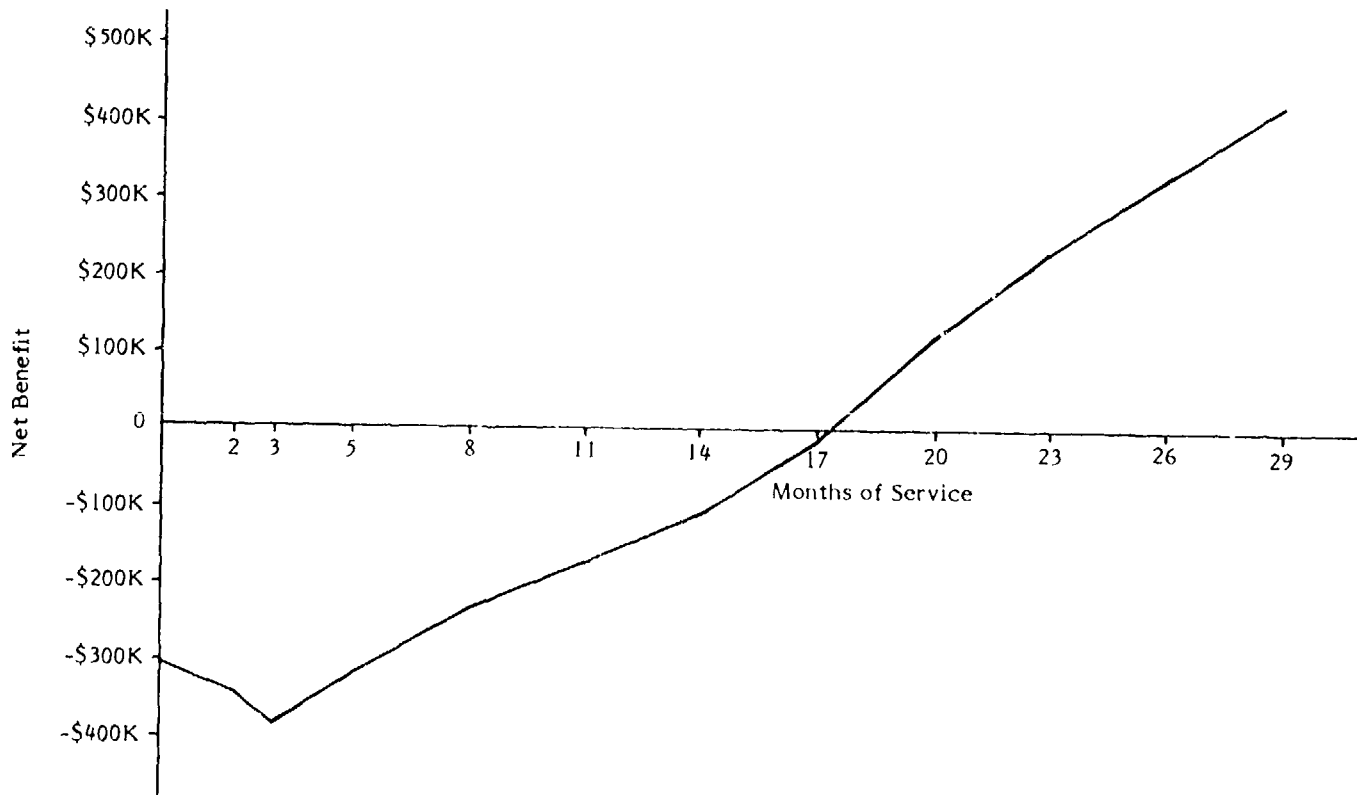


Figure 2. Net benefits over time for the 3-day REPORT program with 25 students per class.

Table 10 also presents the estimated costs to offer REPORT as a 2-day program with 25 students per class and as a 3-day program with 84 students per class. These estimates were \$281,637 and \$294,132 respectively. Under both alternatives, REPORT would be more cost effective than the version tested; the benefit-to-cost ratio was 2.8 to 1 for the 2-day program and 2.7 to 1 for the 3-day program with 84-students per class. In addition, the payback point for these two alternatives would be reached sooner since their total implementation costs were less than those for the version tested. These results assume that both alternatives produce the same gain in man-months of service as the program tested.

DISCUSSION

Considering all the results together, REPORT is a promising counterattrition program for GENDET-destined recruits. Although the differences in attrition between the REPORT and control groups did not reach conventional levels of statistical significance, the persistence of the differences over time as well as the magnitude of the benefit-to-cost ratios for the different versions of REPORT are evidence of the program's effectiveness. Given that REPORT provided only 3 days of training, it would be unreasonable to expect a treatment of such limited duration to produce statistically reliable reductions in attrition.

In terms of training attrition and performance, the results indicated that the behaviors targeted by REPORT were affected in the desired direction. REPORT participants had a lower attrition rate during recruit training, apprentice training, and "A" school than did control recruits. In addition, REPORT participants had better performance records during recruit training; that is, they experienced fewer administrative actions and spent fewer days in special units than did the control recruits.

The results point to a positive impact on REPORT recruits that can be attributed to participation in the program. The possibility that the results were due to sampling bias can be discounted since the recruits were randomly assigned to REPORT and control groups and the groups were similar in demographic composition on variables known to be related to attrition. The possibility that the results were due to special status assigned to or perceived by REPORT recruits can also be discounted. Although their participation in an experimental program may have afforded some initial satisfaction, involvement in the recruit training process over time probably diminished, and finally eliminated, any special status associated with participating in REPORT. The results suggest that REPORT was successful in providing recruits with a realistic set of expectations and with some adaptive skills and behaviors with which they could experience success early in recruit training. Because of these early success experiences, REPORT recruits developed the positive attitudes necessary to complete the remainder of training successfully.

The results in terms of fleet attrition and performance provide additional support for REPORT as a promising counterattrition program. REPORT did not simply delay normal attrition by keeping in the Navy those recruits who should have been allowed to attrite during training. The retention advantage experienced during training by GENDET-destined members of the REPORT group continued into their fleet assignment and was maintained after 29 months of service. The similarity in fleet performance as judged by supervisory personnel suggests that individuals retained as a result of REPORT were performing as well as were other GENDETs in the fleet. These results argue against the notion that only the poor performers are retained as a result of counterattrition programs such as REPORT.

CONCLUSION

REPORT is a promising GENDET counterattrition program that produced a modest training attrition reduction that was sustained during fleet assignment and that generated substantial benefit in productive service time for the Navy.

RECOMMENDATION

It is recommended that the Research Applications Center at CNET conduct additional testing and evaluation of REPORT to determine whether the program warrants implementation on a Navy-wide basis.

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